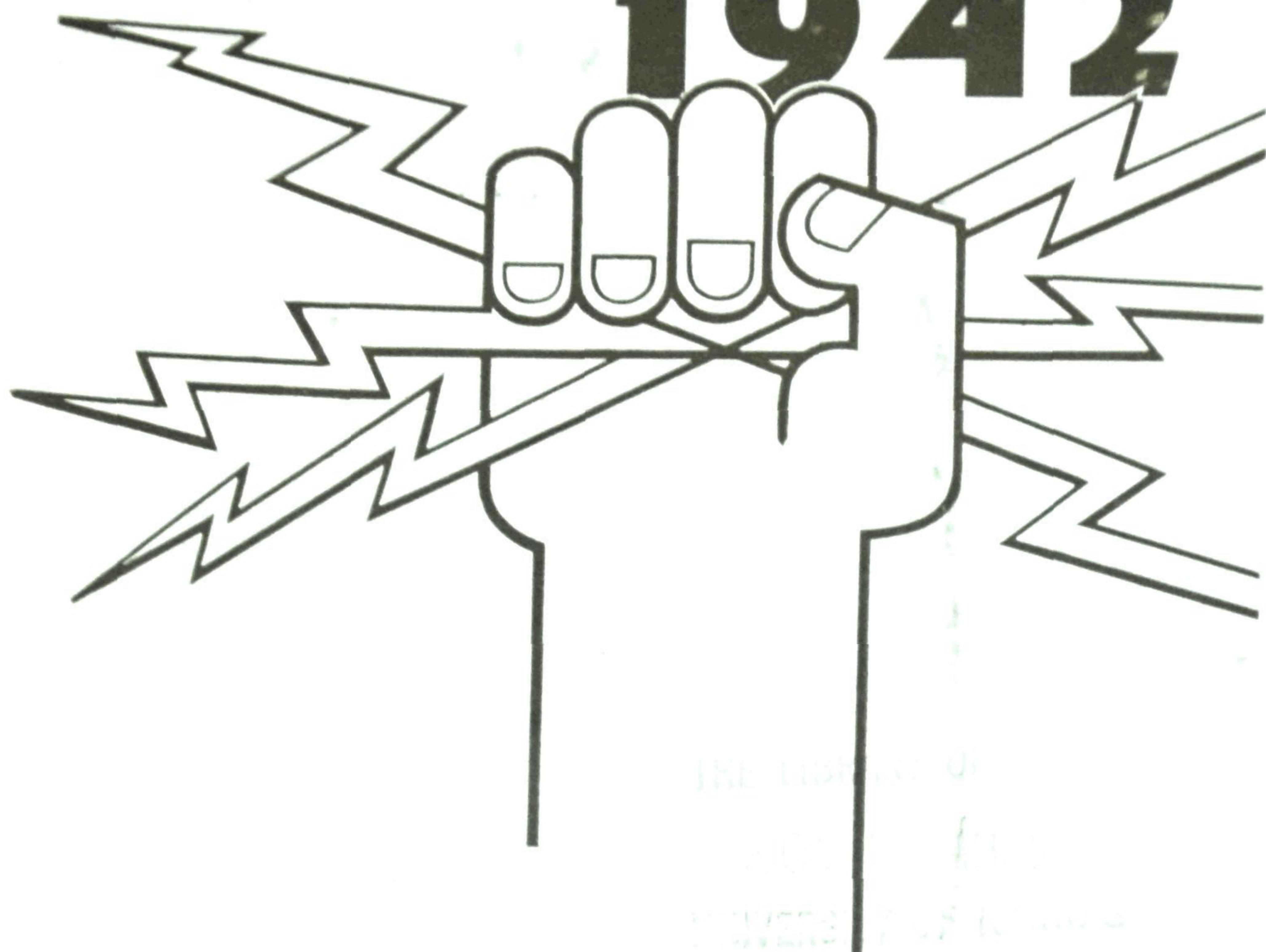


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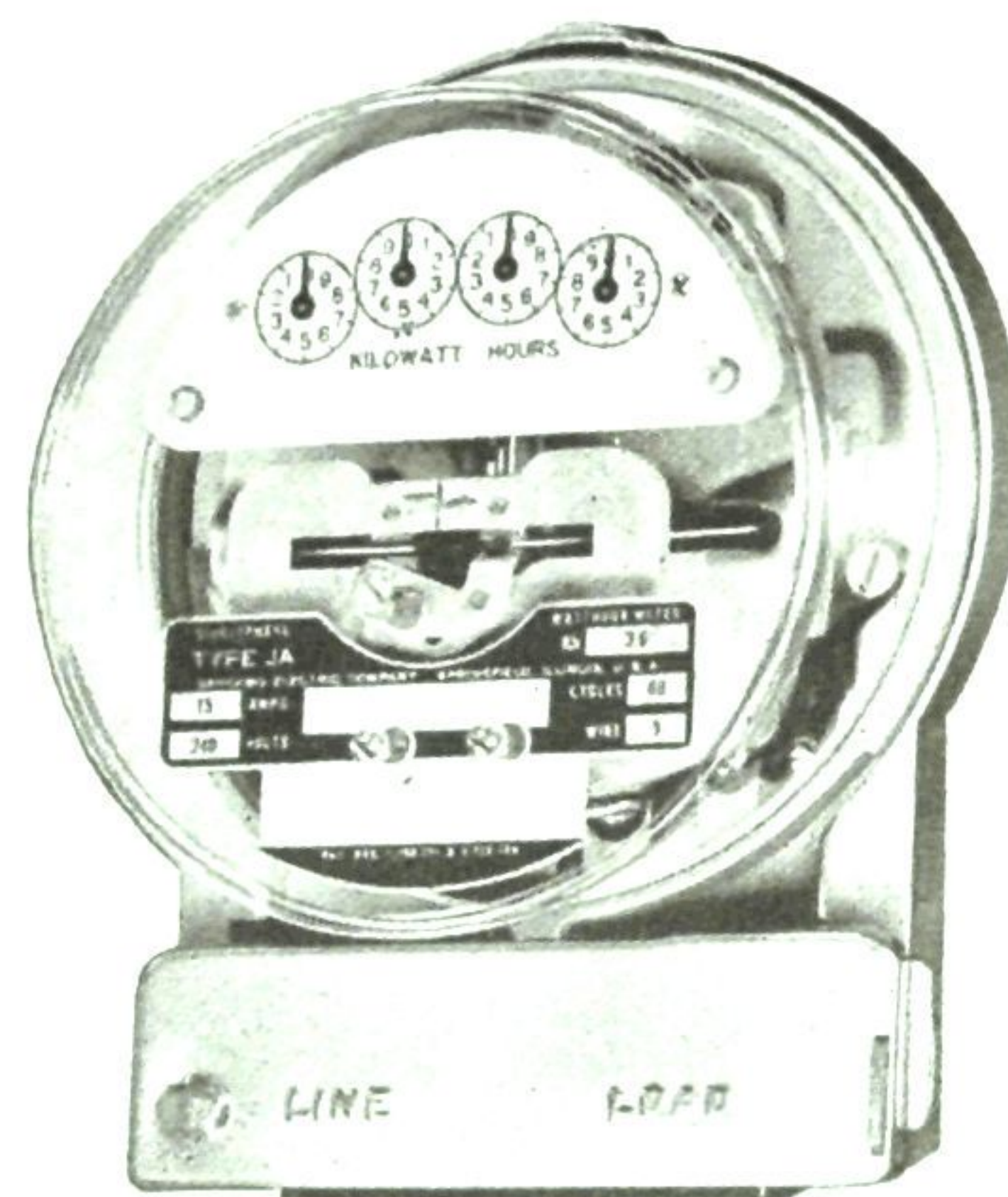
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**ELECTRICAL  
SHOW**

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*P r o g r a m*

1942

Electrical Show



UNIVERSITY OF ILLINOIS

Urbana, Illinois

April 9, 10, 11



*Electrical Engineering Laboratories  
Physics Building*





Signal Corps on Maneuvers at Camp Custer, Mich.

## DEDICATION

The departments of Electrical Engineering and Engineering Physics for many years have been graduating and sending their men out into industry where they have always been good engineers and oftentimes outstanding engineers. Now, however, we are at war and many of our graduates have been called from industry to serve in the armed forces of our country.

We, the present students of Electrical Engineering and Engineering Physics, acknowledging their acceptance of duty to their country, wish to dedicate this show to all of these men. Because of the limited space, only a partial list of these men can be included here. All of them have worked on previous shows while they were students.

Andermann, R. E., '40, Army  
Andrt, F. F., '40, Sig. Corps  
Bauman, P. A., '40, Sig. Corps  
Blackstock, J., '40, Sig. Corps  
Blakeney, R. A., '32, Army  
Buechel, J. C., '40, Air Corps  
Burton, R. P., '40, Sig. Corps  
Bush, R. R., '40, Cavalry  
Carson, C. J., '41, Sig. Corps  
Coggins, M. H., '40, Sig. Corps  
Dysen, A. A., '37, Army  
Elvove, E., '40, Sig. Corps  
Feik, R. L., '41, Sig. Corps  
Fickie, W. F., '41, USNR  
Gonseth, Ken., '39, Sig. Corps  
Gray, P. G., '36, Sig. Corps  
Hang, D. F., '41, USNR

Hansen, J. D., '40, Sig. Corps  
Harback, H., '39, Sig. Corps  
Hazen, D. F., '40, Sig. Corps  
Hicks, R. L., '40, Eng.  
Hong, Ed., '37, Sig. Corps  
Horning, E. H., '31, Sig. Corps  
Johnson, A. R., '41, Sig. Corps  
Kempf, R. A., '37, USNR  
Liewinko, L. S., '41, USNR  
Little, R. R., '37, Army  
Marriett, R., '41, Army  
Nagle, H. J., '36, Sig. Corps  
Panichi, L., '32, Sig. Corps  
Powers, S. C., '41, F. A.  
Rann, R. H., '40, Sig. Corps  
Robinson, L. H., '41, Sig. Corps  
Rosenman, Leo, '40, Sig. Corps

Ruffner, G. Jr., '41, F. A.  
Rugg, A. P., '40, Sig. Corps  
Schmidt, R. B., '41, Sig. Corps  
Shick, Dale, '39, Sig. Corps  
Shnoble, J. D., '41, USNR  
Sinks, R. M., '40, USNR  
Sinks, W. A., '38, USNR  
Smoot, W. D., '41, Sig. Corps  
Spengler, Joe, '39, USNR  
Stier, Paul, '39, Sig. Corps  
Stoddert, T. M., '36, USNR  
Vasconcellos, J. A., '40, Sig. Corps  
Wayham, C. F., '40, Sig. Corps  
Wetzel, J. H., '39, Sig. Corps  
Wetzel, R., '39, Sig. Corps  
Wist, E. D., '38, Sig. Corps  
Witort, W. W., '41, USNR

## The Electrical Show

*A bi-ennial production of the students in Electrical Engineering and Physics Engineering.*

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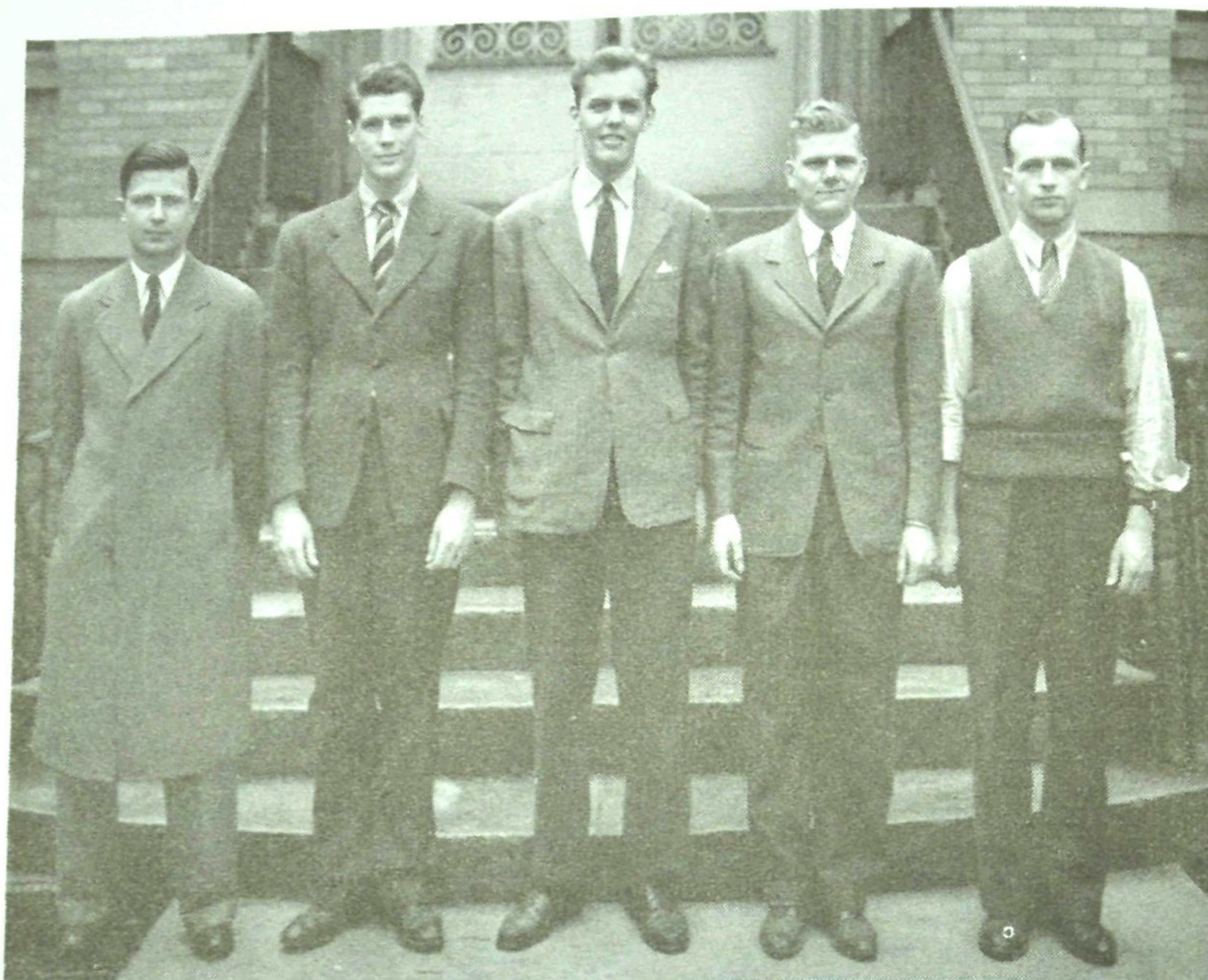
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Assistant G. S. Klaiber  
Res. Assistant G. C. Baldwin  
Res. Assistant N. C. Colby  
Res. Assistant T. W. Mastin  
Asst. Mechanician W. C. Deem  
Mechanician C. W. Fieg  
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Glassblower A. H. Colbey  
Stockkeeper O. H. Marshall  
Storekeeper H. T. Wyninger  
Secretary Della M. Rogers  
Stenographer Virginia Brown





Left to right: Allen, Landon, Hammar, Wuellner, Kuder

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### IN APPRECIATION

As a cooperative enterprise, the Electrical Show depends upon the combined efforts of Students, Faculty, Commercial contributors, and the general public. Lack of a priority number and ill-timed building repairs were obstacles which were surmounted only by the dogged determination of the students. Invaluable advice and assistance was rendered by all members of the faculty. Commercial companies, even though pushed to capacity by defense needs, were very generous in the contribution of equipment and materials. The general public, by their interest and attendance, have furnished us with a motive for making this show the best yet.

Thank you for your support!

WILLIAM W. WUELLNER  
Chairman

### INSTRUCTIONS FOR SEEING THE SHOW

Exhibits for the show are located in four buildings, the Electrical Engineering Laboratory, the Illumination Laboratory, the High Voltage Laboratory, and the Physics Building. You will be admitted to each of these buildings on the same ticket; your ticket will be punched as you enter each building. Performances are going on all the time in the Electrical Engineering Laboratory and in the Physics Building, while performances will be given in the Illumination Laboratory and in the High Voltage Laboratory at regular intervals. You do not have to go through the buildings in any particular order; go to the one which is least crowded.

A main Public Address system has been installed between each of the four buildings, so that announcements will reach everyone present at the show. If you are lost, or if you seek information concerning the location of exhibits, do not hesitate to ask the men in charge of exhibits. They will be glad to help you!

### ELECTRICAL ENGINEERING EXHIBITS

#### 1. Automatic Drinking Fountain:

This fountain knows just when you are thirsty. So all you have to do is say "Abra Kadabra" and it turns on. R. J. Ballard '42.

#### 2. Sound Recording:

Demonstration will be made with some of the best available apparatus for sound recording. This equipment is used in a modern broadcasting station. R. Hockfield '43.

#### 3. Bell Telephone:

The Illinois Bell Telephone Company loans us "Elmer," the mechanical wizard who gets your number for you when you dial. Watch how efficiently and quickly Elmer operates. R. A. Hammar '42, R. J. Ballard '42.

#### 4. Tin Can Motor:

A common tin can is made into a motor and caused to run at high speed. R. J. Stegen '42, G. Martin '45.

#### 5. Three Phase Fields:

Why does the iron ball, when thrown into the ring, spin rapidly? A number of interesting effects can be demonstrated. J. H. Gamble '42.

#### 6. Glass Is a Conductor:

If you thought that glass was an insulator, step up and see this demonstration. Then change your ideas! C. E. Albrecht '43.

#### 7. Kissometer:

An impartial and scientific measurement of an osculation (kiss to you). Bring your own girl, and the Electrical Show assumes no responsibility. H. A. Frost, W. J. Goodwin '42.

#### 8. Electric Gun:

A projectile is shot from this gun with high velocity by the force of a magnetic field. L. Bess '42, J. I. Flyer '42, W. R. Smith '44.

#### 9. Barber-Colman Company:

Something for use with that new pair of tires—a completely radio controlled garage door. R. L. Thing '43.

#### 10. Cutler-Hammer:

Interesting examples of some of several of the products of this company are here on display. The Multi-Breaker and Thermal Overload Protection are typical of the Cutler-Hammer products. V. Hatch '42.



- 12. Reflex Action Timer:**  
Here you can have your reaction time tested. Compare it with that of your friends and see if you are naturally quick or slow. The meter gives your answer in hundredths of a second. G. S. Jerdan '42, R. J. Ballard '42.
- 13. Ring the Peg:**  
Step right up and try your luck folks! Here is a variation of the old carnival game that can't be beat. C. L. Kleemann '42.
- 14. Bucking Bronco Motor:**  
Harder to manage than an Arizona Mustang. Many theories have been offered to explain the action of the motor. What is your suggestion for breaking it in? W. E. Fitch '43.
- 15. Jacobs Ladder:**  
The rungs of this ladder would hardly support you, but they would sure give you a jolt. R. J. Krieger '42.
- 16. Automatic Blackout Light Control:**  
The E. E. Lab has been protected so that if there should be an air raid during the show the lights will be automatically turned off. W. W. Wuellner '42, R. J. Ballard '42.
- 17. Lie Detector:**  
Very few people can beat a lie detector. Come in and test your self control. W. J. Cheronas '42.
- 18. Selsyn Motors:**  
You can shake hands with yourself by remote control! H. J. Becker '42.
- 19. Floating Dishpan:**  
See a dishpan floating in mid-air defying gravity. Can you explain it? Absolutely no strings attached. R. A. Hammar '42, W. J. Reace '42.
- 20. Electric Chair:**  
Stand back, please! We have a man that lives after being subjected to the high voltage of the Electric Chair. G. Dacey '42, R. W. Landon '42, J. J. DeJonghe '43.
- 21. Oscilloscope Patterns:**  
The Lissajous figures are produced by two waves which control the electron beam to the oscilloscope screen. A number of different patterns can be made by varying the intensity and frequency of the waves. D. R. Karl '42.
- 22. Stroboscopic Effects:**  
Did you ever try to read a newspaper rotating at 1,800 rpm? You can do it now! Objects moving with high speed appear to stop under this light. R. F. Riggs '42, R. Schadt '42.
- 23. Visual Demonstration of Sound:**  
Have you ever wondered what your voice looked like? Now is your opportunity to see it on the screen of the oscilloscope. You will see also the demonstration of radio frequency tones. H. M. Lefler '42.

**STRAUCH'S, on Campus**  
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- 24. Transmission of Sound by Light:**  
Speak into a flashlight and hear your voice picked up by an amplifier some distance away. There is no external connection to the flashlight. Your voice is transmitted by the light beam. D. F. Melohn '42, D. Dunbar '43, C. Meinheit '42, W. McNabb '42.
- 25. Electrical Contact with the Spirits:**  
Communicate with the spirits of past victims of the electric chair. This is done by the ultra-high frequency penetration of the ectoplasm. J. C. Kuhns '42, S. M. Wood '45.
- 26. Speech Scrambler:**  
You have to learn a new language to understand this dialect. You will be surprised to hear your speech literally turned upside down. J. W. Stubner '42.
- 27. Voice Mirror:**  
Speak into the phone and a few seconds later your voice will come back to you exactly as you spoke into the phone. Hear how your voice sounds to your friends! D. H. Kuhn '42.
- 28. Cold Stove:**  
Presenting a new way to prepare meals! What heats the iron skillet? Put your hand on the stove and it does not even get warm. J. W. Conway '42.
- 29. Electronic Music:**  
These are instruments on the Hammond Organ and Orgatron principle. They demonstrate the versatility of electronic instruments in obtaining effects through electronic variation of harmonic content and tone envelope. G. H. Fathauer '42.
- 30. Lighting Effects:**  
As you walk across the roof of the Electrical Engineering Building, don't fail to notice the beautiful patterns which are formed by the colored lights playing in the quadrangle. C. T. Curtis '42, Kelly '43, Germaine '43.
- 31. Sonovox:**  
This instrument acts like a human Larynx. With it you don't have to use your own Larynx to talk. G. H. Fathauer '42, R. Kuder '42, P. Ellsworth '43.
- 32. Supersonic Vibrations:**  
See a quartz crystal vibrating under oil at an ultra-high radio frequency. M. Allen '42.
- 33. Standing Waves in a Fluorescent Bulb:**  
A resonant circuit is used to produce waves which seem to stand still in a fluorescent tube. J. S. Wexler '42.
- 34. Vreeland Oscillator (Singing Arc):**  
Everyone has seen a carbon arc, but have you ever heard one play a tune? By connecting the arc in a simple resonant circuit, it is possible to obtain a crude sort of musical note. A. W. Vodak '42.
- 35. Signal Corps Apparatus:**  
This exhibit shows the latest type equipment used by the Signal Corps, including portable pack type transmitting instruments for field use. M. H. Poole '42.

**HOTEL TILDEN-HALL**  
*Mural Dining Room—Coffee Shop—Lounge*  
Neil Street at Hill  
Champaign, Ill.



36. **Television Exhibit:**  
By means of a high balloon, we will try to pick up a television broadcast from Chicago. E. DeMers '42, E. L. Hulla '42.
37. **F-M:**  
Here is some apparatus which will demonstrate the principles of the newest development in radio. R. Nelms '42, G. Nibbe '42.
38. **Electric Sign:**  
This sign is used for publicity and is located on the South wall of the E.E. Laboratory. Watch it spell out words. W. W. Wuellner '42, W. J. Cherones '42.
39. **Magnetic Mine:**  
Here is your opportunity to see how the magnetic mines developed in this war are built and function. W. Fitzwater '42, P. A. Freeland '43.
40. **Electric Light Plant:**  
This might have been how Westinghouse or General Electric got started in the electrical business. D. I. McKee '43.
41. **Magnetic Bowling Alley:**  
You can't help putting English on the balls in this alley. But the English does not always help! H. J. Becker '42.
42. **Sangamo:**  
Manufacturers of meters of all kinds, samples of their products can be found incorporated in various exhibits throughout the show. J. Adkins '42.
43. **Texas Fire Water:**  
This was brewed in the old Texas style. No modern hooch can compare with it for heat. L. E. Patacsil '42.
44. **Protection of a Factory by Ultra Violet Light:**  
Photocells operating on ultra violet light and placed strategically around a factory keep a person from entering without setting off an alarm although there is no visible means of protection. W. W. Wuellner '42, R. W. Landon '42.
45. **Man Power Indicator:**  
Do you think you are strong? Test your strength and see if you were right. V. A. Rydbeck '43, Henry '43.
46. **Wired Wireless:**  
Included in this exhibit are the pieces of apparatus necessary for communication by means of power lines, by plugging into the ordinary 110-volt house wiring. When ham operation is banned, your rag-chews need not suffer, just operate wired wireless on the power company's lines, and keep the local nets in operation. R. Nelms '42, F. S. Howell '42.

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'24

#### 47. **Wagner Electric Company**

See what the inside of an electric motor looks like, and how motors are protected against overload. J. E. Hinchcliffe '43.

#### 48. **Remote Controlled Tank:**

A demonstration of the possibility of controlling a war tank by radio. See it maneuver at the will of the operator at some distant point. L. A. Hartman '42, W. Fitzwater '42.

#### 49. **Cost of Electricity:**

All housewives should see this exhibit. See how many cents it takes per hour to run a washing machine, a vacuum cleaner, an electric refrigerator, a toaster, etc. Also see how they affect the operation of your meter. J. P. Byran '43.

#### 50. **Ever-Flowing Wine Bottle:**

The bottle is supported in thin air. It is a strange property of this liquid that makes it flow out continuously without ever being replenished. L. J. Maurer '43.

#### 51. **Bonnie Baker in the Woods:**

A wood panel is used as a receiver to pick up inaudible sounds. You can hear them by putting your ear close to the panel. J. S. Moyer '42, P. Ellsworth '43.

#### 52. **Neon Advertising:**

The car you have seen around the E. E. Building with the neon lights on it is the innovation of R. Kuder '42.

#### 53. **Public Address System:**

The main public address system which is connected to each of the four buildings consists of four student built amplifiers and eight speakers. E. L. Hulla '42.

#### 54. **Weston Electric Company:**

This is an exhibit of electrical measuring instruments, photometers, and thermometers. Carl Miller, company representative.

### E. E. LAB AUDITORIUM

Direct from the New York World's Fair, Westinghouse Electric and Manufacturing company presents Electro, the mechanical man, and his dog Sparks. This is the first time it has ever been displayed outside the World's Fair. This is one of the outstanding exhibits of the 1942 Electrical Show. Do not miss it! Company representative in charge.

### ILLUMINATION LABORATORY

Upstairs in the auditorium, demonstration lectures will be given at intervals throughout the show. On the lecture platform will be a small stage, on which striking lighting effects will be achieved, using built-in lights and a complete control panel for that purpose. The lecture will be demonstrated with and will feature "Magic Wands," which are long slender neon tubes each of which glows in a particular color. The effects are very striking. C. W. May '42, J. Smith '44.

### HIGH VOLTAGE LABORATORY

#### 1. **Tesla Coil:**

This laboratory is used to carry on High Voltage work at the University. Here you may see the huge Tesla Coil, which was under construction for a year and a half. Using potentials of several million volts, lightning discharges may be made to dance a ten-foot gap. J. S. Thale '42, Wilson '43, E. C. Tudor '42.

#### 2. **Surge Generator:**

Also, the surge generator will be demonstrated, which builds up a high potential by charging condensers in parallel and discharging them in series. Complete demonstrations will be given at regular intervals throughout the show. D. Jones '43, J. P. Bollero '42.

#### 3. **Radio Frequency Tesla Coil:**

Here is where the vanishing needle stunt can be worked. A shower of sparks, a red glow, and they vanish! G. Dacey '42, DeMers '42.



## PHYSICS EXHIBITS

0. **Crowd Counter:**  
Photoelectric cells tell the exact number of people in the building at each instant. R. J. Debs '42.
1. **Color Organ:**  
See colors played like music! N. C. Colby (Grad), C. A. Fowler '42.
2. **Snake Dance Discharge Tube:**  
A tube filled with ionized vapor undergoes fantastic gyrations when subjected to a magnetic field. R. E. Taylor '42.
3. **Glass Blowing:**  
In experimental research it is often necessary to construct intricate pieces of apparatus entirely of glass. This exhibit features the construction of some of this apparatus. A. H. Colby (Dept.)
4. **Perpetual Motion:**  
Is perpetual motion possible? See our exhibit and decide for yourself. Operator—no one, of course!
5. **Penny Snatcher:**  
The care-less person's bank. Leave your money in the open and thieves cannot touch it. You try! S. Tehon '42.
6. **Museum Pieces:**  
Old style Edison Phonographs, mechanical oscilloscopes, and other antiquated equipment on display.
7. **Gravity Defied:**  
Light bulbs, screw drivers, and metal balls float in mid-air. Can you tell why? C. A. Fowler '42, McTure.
8. **Eddy Current Brakes:**  
If you don't believe that a magnetic field can act like a brake, try turning this wheel. Weiner '42.
9. **Wire Wrapper and Ring Thrower:**  
A demonstration of the interaction of magnetic fields. Weiner '42.
10. **Elliptical Pendulum:**  
An old carnival favorite! Come in and try it—it's free. R. Henderson '43.
11. **Electrical Slide Rule:**  
This slide rule takes products, powers, and roots by means of electrical circuits. C. Longmire '43.
12. **Liquid Air Demonstration:**  
See a cigarette dipped in liquid air burn like a blow torch! See a lead nail driven by a mercury hammer! Rubber tubing becomes as brittle as glass at low temperatures. R. Weiner '42.
13. **X ray Tube:**  
Don't miss the chance to see through golf balls, oranges, your own hands, etc. L. S. Birks '42.
14. **Betatron:**  
This is the most recent invention in Physics. It is used to accelerate electrons. They travel hundreds of miles in a small fraction of a second. Display. L. S. Birks '42.

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*Quality Jeweler*  
At the Sign of the Big  
Clock on Neil St.

•  
CHAMPAIGN

[12]

### 15. Polarized Light:

A visual demonstration of the stresses under load of bridge structures, etc. Hains.

### 16. Stroboscope:

A light that flashes many times a second causes objects which move so rapidly as to be invisible in ordinary light to appear to stop. A. A. Layton '42; W. Henderson '42.

### 17. F-M, A-M:

A demonstration of the new frequency modulation in radio vs. the usual amplitude modulation. R. Henderson '43.

### 18. Lecture Demonstration:

A striking illustrated lecture on: Active nitrogen, positive ray tubes, cathodeless discharge tubes, cold cathode rectifier, molecular bombardment, cloud chambers, and lecture demonstration of preparation of liquid oxygen. Klaiber (Grad.); R. J. Debs '42; Smith '42.

### 19. Van de Graff:

By means of the balloon fabric belt, charges are carried up through the insulating column into a large metal sphere, producing potentials in the neighborhood of 500,000 volts. These generators are used in nuclear disintegration experiments, high potential vacuum tube work, and corona and electrical surge investigations. A. P. Boysen '42; R. E. Taylor '42.

### 20. Linear Accelerator:

This is one of the types of "Atom Smasher" for nuclear disintegration. The electrons are liberated at the bottom and fall upward under the force of electric fields. At the top they are intercepted for investigation. Berger (Grad); Gillett (Grad).

### 21. Electrostatic Exhibit:

An interesting display of electrostatic machines driving various devices such as electrostatic motor, windmill, oscillating pithballs, etc. A. P. Boysen '42.

### 22. Lissajous Figures:

"Tracks in the sands of time." A demonstration of the motion of a particle subject to two periodic motions. R. A. Henderson '43.

### 23. Spinning Chair:

The one man Merry-go-round . . . and you can adjust your own speed. J. Burton '44.

### 24. Modulated Light Beam:

A voice modulates the intensity of a light beam and is transmitted by the beam for long distances. S. Tehon '42.

### 25. Illumination of Flowers by Colored Light:

How do your favorite flowers appear under colored light? Come and investigate! G. Schott '43.

## LARGE CYCLOTRON

This is one of the largest cyclotrons in the United States. It is capable of giving energy equivalent to 30,000,000 volt alpha particles and weighs 75 tons. It was built at a cost of approximately \$50,000. It is housed in a separate building south of the Transportation Building. Prof P. G. Kruger; Assist. Prof. J. R. Richardson.

In engineering there is the dollar-fifty slide rule which will stimulate calculations temporarily. But the best rule is the LOG LOG DECITRIG—the one that not only does a good immediate job, but also takes care of future and higher mathematical calculations.

## UNIERSITY BOOK STORE

202 South Mathews

[13]



## RAILWAY CLUB EXHIBITS

### 1. Electric Test Car:

Only college-owned interurban test car in the United States. Equipped for recording power consumption, testing rail bonds, and performing experiments on car heating apparatus. This car is on the spur track crossing Burrill avenue just north of the Foundry Laboratory. R. M. Stacy '12, Wm. Hugginbotham '13.

### 2. Operating Semaphore:

Actual signal, full size, as used by many U.S. railroads. Operated and illuminated by electricity. Blade and lenses move up and down as though indicating the passage of a train. E. DeMers '12.

### 3. Signal and Interlocker Demonstration:

Midget interlocking plant operates in the same manner as its prototype, routing model trains at the will of the towerman. Working block signals make collisions impossible. E. DeMers '12; A. Suzel '11; Wm. Cramer '11.

### 4. Scale Model Freight Train:

Built for electric operation on the U.E.Y. Model Railroad, an extensive scale-model line located in permanent quarters at the University YMCA on South Wright Street. Model is 1-87th the size of a real train. F. H. Baldwin '11.

## AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS

The University of Illinois Student Branch of A.I.E.E. is an organization composed of students who are enrolled in the Electrical Engineering Department. The purpose of the Student Branch is to promote various professional activities among the Electrical Engineering students. One of its most significant duties is that of beginning the organization of the Electrical Show by holding, early in the fall, the election of the Board of Managers. It is the job of the board to complete the organization of the show, and to coordinate the activities in the Electrical Engineering and Physics Departments.

## PHYSICS CLUB

The Engineering Physics Club has for its members all of the students enrolled in the Engineering Physics course. The club is organized for the purpose of coordinating the efforts of, and securing the cooperation of, the Engineering Physics students in the design and construction of the exhibits for the Electrical Show. The Club, through its informal meetings with members of the Physics Department, affords the Engineering students an opportunity to become acquainted with men who are engaged in research in many branches of Physics.

## RAILROAD CLUB

The Illini Railroad Club is an organization of students who are interested in steam and electric railroads. The club sponsors the Illini Railnews, a monthly publication with national circulation. The purpose of the Railroad Club exhibits is to acquaint you with some of the applications of electricity to railroading.

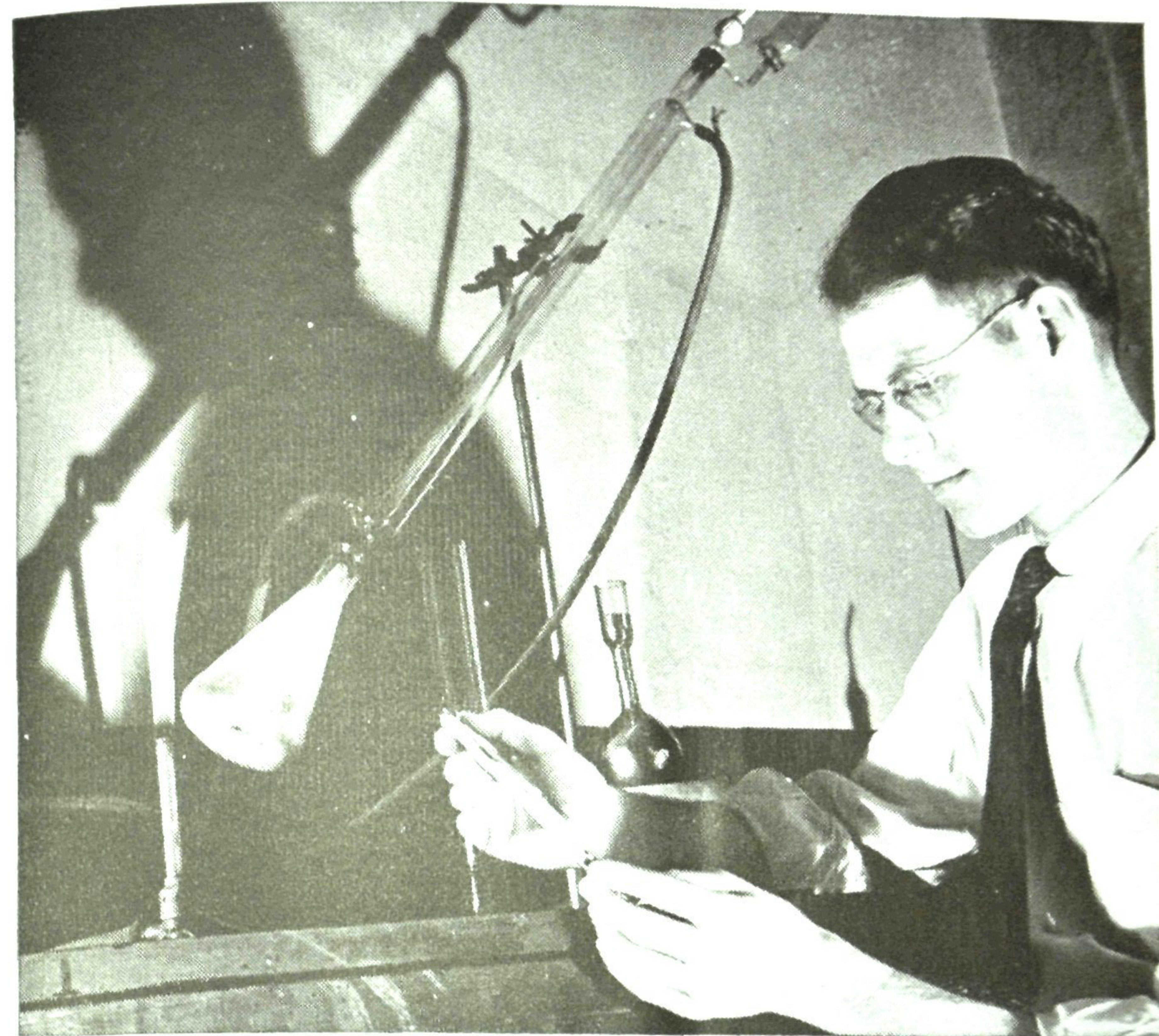
## SYNTON RADIO FRATERNITY

The primary aims of the organization are to foster brotherhood and cooperation among radio men; to encourage radio experimentation and research among the college students; and to promote amateur radio activities and station operation of the highest caliber. The requirements for membership in Synton are an active interest in radio, and the ownership of an amateur license or the acquisition of such within a specified time after becoming a member.

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# G-E Campus News



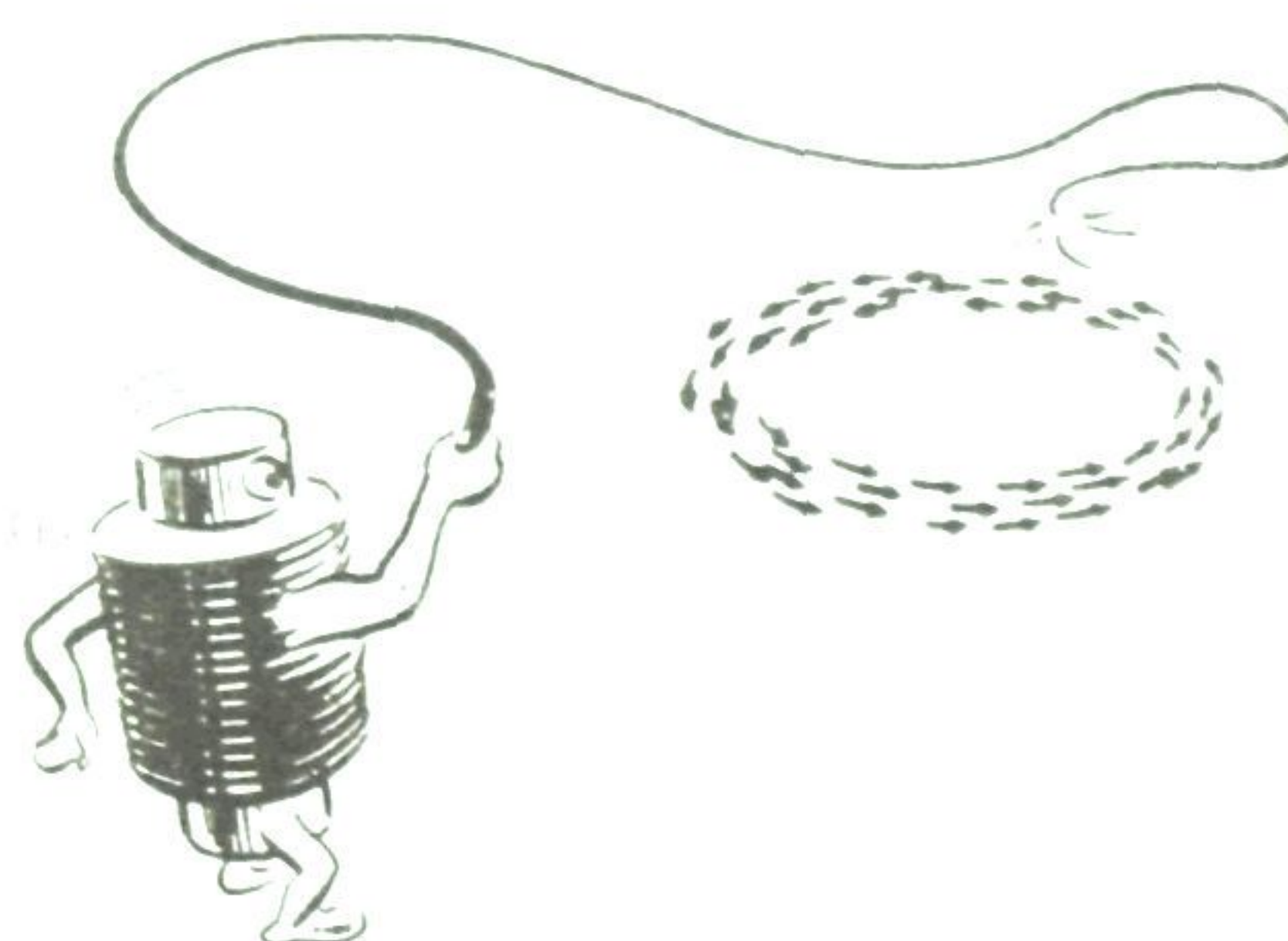
## 100 TIMES TOO BRIGHT

**I**N the early days of electric lights, economical city fathers used to turn out the street lamps on nights when there was a full moon. For the best blackout techniques today, even moonlight is 100 times too bright. But although air-raid wardens can't do anything about the moon, for overcast nights General Electric's illuminating laboratory has developed a special street light which produces illumination about equal to starlight.

The fixture contains a 10-watt lamp, so concealed that the only light visible comes through a circular narrow piece of plastic around the side. A projecting black canopy screens the light from the eyes of aviators. The light output, equivalent to that from a single candle flame, seems at first sight to be practically zero. But after a little time eyes become adjusted, as they do in a movie theatre, and objects can be dimly seen 30 to 40 feet away. Specifications for the new lamps are based on the experience of the British in their blackouts.

## ELECTRON WHIRLIGIG

**W**HETHER you call it a "rheotron" or "betatron" or by its longer name of "induction electron accelerator," a new science tool recently built by Dr. Donald W. Kerst in the G-E Research Laboratory is one of the world's most potent merry-go-rounds. On it, electrons ride to a speed closely approximating that of light—equivalent to that produced by 20 million volts. Copper bombarded by these dizzy, super-speed electrons becomes temporarily radioactive, and other interesting possibilities are being investigated.



Dr. Kerst, young professor at the University of Illinois, got the idea for the device, built a small model, and came to General Electric to build a bigger one. Like the much-publicized cyclotron, except that it accelerates electrons instead of positive ions, the device chases the charged particles round and round in a magnetic field, adding to their speed at every revolution. Scientists are reticent about predicting what the rheotron's chief use will be, but it is promising enough so that a bigger one is being built in the G-E laboratory to give speeds of 100 million volts.

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